

REMARKS

Upon entry of this amendment Claims 1-4, 6, 8, 10 and 11 are pending in this application. Claim 1 is amended to further recite the material limitations. Claims 13 to 23 are presently canceled.

Claims 1-4, 6, 8, 10 and 11 are rejected under 35 U.S.C. §112 first paragraph. Applicant has amended claim 1 to remove the term "continuous." Applicant respectfully request that this rejection be withdrawn.

Claims 1, 3, 4, 6, 8, 10 and 11 are rejected under 35 U.S.C. §103(a) as unpatentable over U.S. Patent No. 5, 242, 501 (McDiarmid) in view of U.S. Patent No. 3,151,006 (Grabmaier); and further in view of U.S. patent No. 5,242,501 (Inoue). The Examiner further rejects Claims 1-4, 6, 8, 10 and 11 under 35 U.S.C. §103(a) as unpatentable over U.S. Patent No. 5,891,251 (MacLeish) in view of Grabmaier, and further in view of Inoue. Applicant respectfully traverses these rejections and submits that the amended claims of this application are patentable over the cited art.

When rejecting claims under 35 U.S.C. §103, the Examiner bears the burden of establishing a prima facie case of obviousness. See, e.g., *In re Bell*, 26 USPQ2d 1529 (Fed. Cir. 1993); M.P.E.P. §2142. To establish a prima facie case, three basic criteria must be met: (1) the prior art must provide one of ordinary skill with a suggestion or motivation to modify or combine the teachings of the references relied upon by the Examiner to arrive at the claimed invention; (2) the prior art must provide one of ordinary skill with a reasonable expectation of success; and (3) the prior art, either alone or in combination, must teach or suggest each and every limitation of the rejected claims. The teaching or suggestion to make the claimed invention, as well as the reasonable expectation of success, must come from the prior art, not Applicant's disclosure. *In re Vaack*, 20 USPQ2d 1438 (Fed. Cir. 1991); M.P.E.P. §706.02(j). If any one of these criteria is not met, prima facie obviousness is not established.

In the Response to Arguments Section of the subject Office Action the Examiner acknowledges that neither McDiarmid nor Mac Leish describe the problems of wafer backside damages and contaminations caused by the surface contact with the susceptor, and the backseal

applications that are made possible by the wafer carrier of the present invention. The Examiner then states that these benefits are inherent in the type of holder claimed and are well known in the art. The Applicant respectfully disagrees.

This benefit is arrived at by the present invention, by the limitations as recited in claim 1, and is not inherent. It is the specific dimensions and materials recited in claim 1 that provides a wafer carrier that permits its use in backseal applications – a specific type of processing of semiconductor wafers. The specific materials recited in claim 1 are amended to be limited to specific materials, and that the carrier be made essentially of these materials. Applicant respectfully submits that none of the cited references teach or suggest this limitation, either alone or in combination.

The Examiner cites *Gardner v. TEC Systems, Inc.* 725 F.2d 1338, 220 USPQ 777 (Fed. Cir. 1984), cert denied, 469 U.S. 830, 225 USPQ 232 (1984) for the principle that where the only difference between the prior art and the claims was a recitation of relative dimensions of the claimed device, and a device having the claimed relative dimensions would not perform differently than the prior art device, the claimed device was not patently distinct from the prior art device. Applicant respectfully submits that this is not the case in the present situation. The wafer holder as presently claimed does perform differently than the prior art devices. The prior art carriers are comprised substantially of graphite which exhibit anisotropic heating performance, such that the dimensions of the carrier expand differently in the different directional planes upon heating. This permits deposition on the backside of the wafer, unlike the carrier of the present invention.

Further, the mere fact that the materials of Inoue or Grabmaier can be combined, *arguendo*, with the shape of the susceptor of McDiarmid or MacLeish does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. *In re Mills*, 916 F.2d 680 (Fed. Cir. 1990). The court held that although a prior art device may be capable of being modified to run the way the apparatus is claimed, there must be a suggestion in the reference to do so. *Id.* at 682.

Applicant submits that the disclosures of Inoue and Grabmaier are not concerned with isotropic heating to maintain contact with a substrate around its periphery to permit backseal

applications as recited in Applicants claims. There is no evidence showing the suggestion or the desirability in any of the cited references to combine the materials of Inoue or Grabmaier with the shape of the susceptor of McDiarmid or MacLeish, to provide a wafer carrier that can prevent wafer backside damages and contamination and deposition on the wafer backside. In fact, the material of the susceptors in McDiarmid and MacLeish are selected to *perform a certain function*, i.e., to conduct RF energy. Applicant submits that to substitute a different material would *defeat* the desirability of the specific materials taught by McDiarmid and MacLeish. Given the specific purpose of the materials, McDiarmid and MacLeish cannot be found to suggest a different material, and in the Applicant's view McDiarmid and MacLeish teach away from such a combination.

Applicant continues to emphasize that the selection of one material over another is not a simple, or obvious matter. As stated above the wafer susceptor of McDiarmid and MacLeish are comprised substantially of graphite for an important reason - graphite acts as a conductor to couple RF heating to the wafer carrier. However, the graphite susceptors of the prior art are not suited for the wafer carrier of the present invention, because graphite has anisotropic thermal properties which result in unpredictable thermal effects, particularly thermal expansion which is orientation dependent and difficult to control, and is thus not suitable for supporting a wafer around its entire periphery edge as recited in Applicant's claims. In the present invention, the material for the wafer carrier is selected based on a variety of factors including its thermal expansion and thermal conductivity, so that the wafer carrier not only promotes heat transfer to the wafer, but also maintain linear continuous contact with the periphery edge of the wafer to provide backseal applications. Without the backseal application in mind, one would not be motivated to consider these factors.

In view of the foregoing, Applicant respectfully submits that a prima facie obviousness has not been established. Withdrawal of the rejections under 35 U.S.C. 103 is respectfully requested.

If any matters can be handled by telephone, Applicant requests that the Examiner telephone Applicants' attorney at the number below. The Commissioner is authorized to charge any additional fees to Deposit Account No. 50-2319 (Order No. A-64873-1/MSS (463035-350)).

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Maria Swiatek", written over a horizontal line.

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